

## NTS500 Series

500 Watts

**Total Power:** 200 - 500 Watts  
**Input Voltage:** 85 - 264 Vac  
120 - 300 Vdc  
**# of Outputs:** Single



### Special Features

- Active power factor correction
- IEC EN61000-3-2 compliance
- Remote sense
- Power fail and remote inhibit
- Single wire current sharing
- Built-in EMI filter
- Low output ripple
- 5 V standby
- 12 V fan output
- Overvoltage protection
- Overload protection
- Thermal overload protection
- DC power good
- Built in OR-ing diode / FET
- Optional fan cover (-CF suffix)
- PM Bus compliant
- Digital I<sup>2</sup>C interface
- 2 year warranty
- POE isolation on NTS508

### Safety

- **TUV:** 60950
- **cCSAus:** 60950
- **NEMKO:** 60950
- **CB:** Certificate & report
- **CE:** Mark (LVD)

### Electrical Specifications

| Input                          |  |
|--------------------------------|--|
| Input range:                   | 85 - 264 Vac (wide range)  |
| Frequency:                     | 47 - 63 Hz   |
| Inrush current:                | 50 A max., cold start @ 25 °C  |
| Efficiency:                    | 85% typical at full load, nominal line   |
| EMI filter:                    | FCC Class B conducted and radiated; CISPR22 Class B conducted and radiated; EN55022 Class B conducted and radiated; VDE0878PT3 Class B conducted and radiated. |
| Safety ground leakage current: | < 0.5 mA @ 50/60 Hz, 264 Vac input   |
| Output                         |  |
| Maximum power:                 | 200 W for convection; 500 W with 30 CFM forced air   |
| Adjustment range:              | ± 5%   |
| Standby output:                | 5 V @ 1 A convection, 2 A forced air, regulated, ± 5%  |
| Fan output:                    | 12 V @ 1 A, -5%, +7%, 0.5 A for -CF version  |
| Hold-up time:                  | 20 ms @ 500 W load, 115 VAC nominal line at factory voltage setting  |
| Overload protection:           | Short circuit protection on all outputs. Case overload protected @ 115 - 130% above peak rating  |
| Overvoltage protection:        | 20 - 35% above nominal output  |



## Logic Control

|                |  |
|----------------|--|
| Power failure: | TTL logic signal goes high 100 - 500 msec after main output. It goes low at least 4 msec before loss of regulation |
| Remote on/off: | Requires an external contact closure to inhibit outputs  |
| DC OK:         | TTL logic goes high after the output is in regulation. It goes low when there is loss of regulation.               |
| Remote sense:  | Compensates for 0.5 V lead drop min. Will operate without remote sense connected. Reverse connection protected.    |

## Environmental Specifications

|                                 |   |
|---------------------------------|---|
| Operating temperature:          | 0° to 50 °C ambient derate each output as 2.5% per degree from 50° to 70 °C.  |
| Storage temperature:            | -40 °C to +85 °C  |
| Electromagnetic susceptibility: | Designed to meet EN61000-4; -2, -3, -4, -5, -6, -8, -11 Level 3   |
| Humidity:                       | Operating; non-condensing 10% to 90% RH   |
| Vibration:                      | Three orthogonal axes, sweep at 1 oct/min, 5 min. dwell at four major resonances 2 G peak 8 Hz to 500 Hz, operational |

## Pin Assignments

### Connector

|            |       |         |
|------------|-------|---------|
| <b>CN1</b> | PIN 1 | Line    |
|            | PIN 3 | Neutral |
|            | PIN 5 | Ground  |

|            |        |                       |
|------------|--------|-----------------------|
| <b>SK7</b> | PIN 1  | V1 swp                |
|            | PIN 2  | - Remote Sense        |
|            | PIN 3  | + Remote Sense        |
|            | PIN 4  | 5 VSB (standby)       |
|            | PIN 5  | 5 VSB return          |
|            | PIN 6  | +12 V                 |
|            | PIN 7  | Common                |
|            | PIN 8  | Inhibit               |
|            | PIN 9  | DC power good (DC OK) |
|            | PIN 10 | Power Fail (POK)      |



### SK8



|       |           |
|-------|-----------|
| PIN 1 | +12 V Fan |
| PIN 2 | Common    |

### CN403



|        |                      |
|--------|----------------------|
| PIN 1  | 5 V_I <sup>2</sup> C |
| PIN 2  | Ground               |
| PIN 3  | A2                   |
| PIN 4  | A0                   |
| PIN 5  | SVCC2_OR             |
| PIN 6  | I <sup>2</sup> C_SDA |
| PIN 7  | I <sup>2</sup> C_SLC |
| PIN 8  | A1                   |
| PIN 9  | N/C                  |
| PIN 10 | +12 V_RTN_CTRL       |

### Adjustment Potentiometers

|           |                   |
|-----------|-------------------|
| <b>P1</b> | +V1 Output adjust |
|-----------|-------------------|

### Mating Connectors

|                |                  |
|----------------|------------------|
| <b>SK4,5,6</b> | Molex 19141-0058 |
|----------------|------------------|

|                            |                                      |
|----------------------------|--------------------------------------|
| <b>SK7 Control signals</b> | Molex 90142-0010<br>PINS: 90119-2110 |
|----------------------------|--------------------------------------|

or

|               |
|---------------|
| Amp: 87977-3  |
| PINS: 87309-8 |

|            |                                   |
|------------|-----------------------------------|
| <b>SK8</b> | JST PHR-2<br>Pins: SPH-002T-PO.5S |
|------------|-----------------------------------|

|              |   |
|--------------|---|
| <b>CN403</b> | JST PHDR-10VS<br>Pins: JST 5PHD-002T-PO.5-L/P or<br>Landwin 2050 S1000<br>Pins: 2053T011P |
|--------------|---|

Emerson Connector Kit #70-841-024 includes all of the above

### Notes:

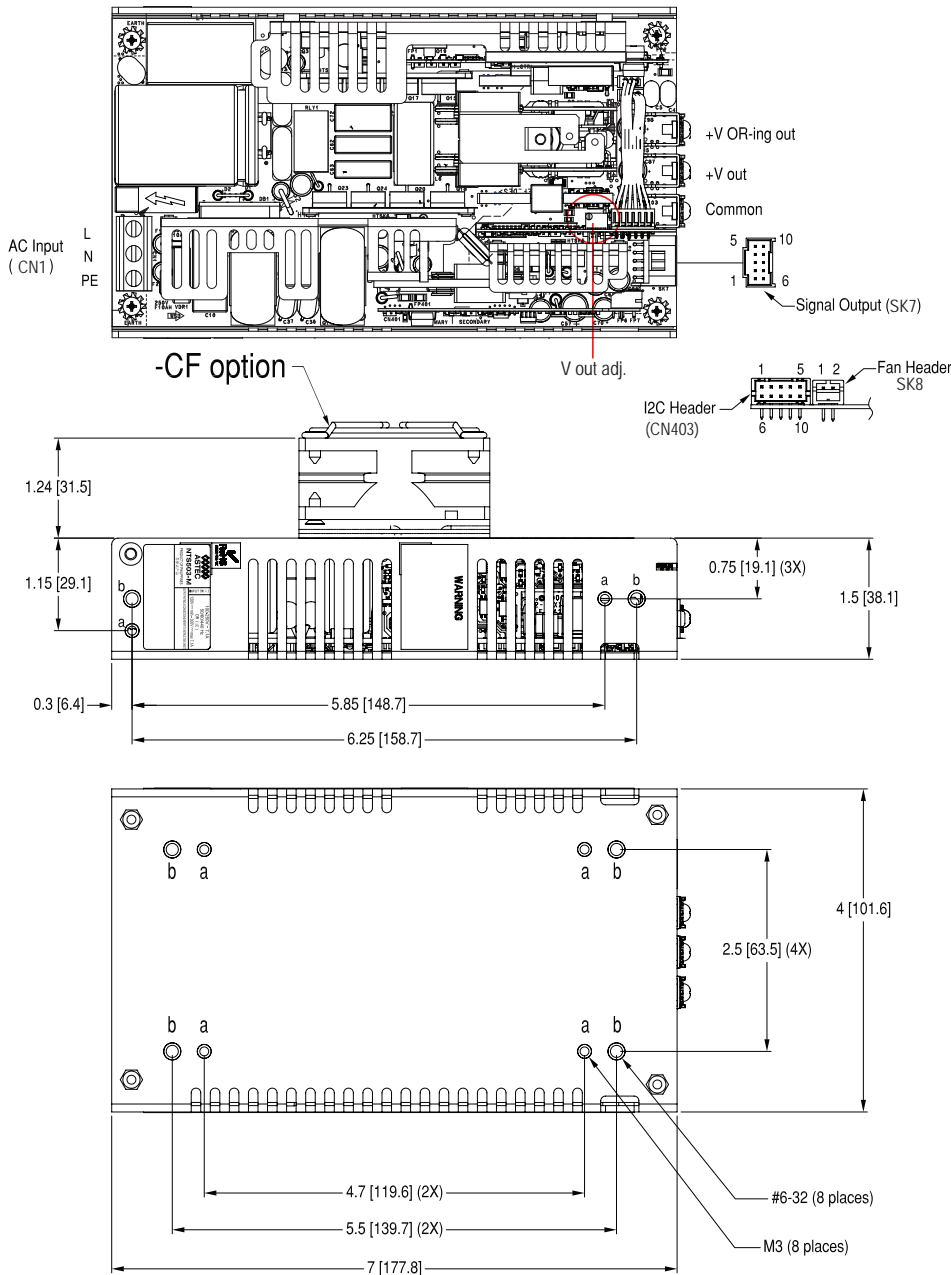
- Specifications subject to change without notice.
- All dimensions in inches (mm), tolerance is ±.02".
- Specifications are at factory settings
- Mounting maximum insertion depth is 0.12".
- Warranty: 2 year
- Weight: 3.016 lb. / 1.18 kg.

## Ordering Information

| Model Number | Output Voltage | Minimum Load | Maximum Load with Convection Cooling | Maximum Load with 30CFM Forced Air | Peak Load <sup>1</sup> | Regulation <sup>2</sup> | Ripple P/P (PARD) <sup>3</sup> |
|--------------|----------------|--------------|--------------------------------------|------------------------------------|------------------------|-------------------------|--------------------------------|
| NTS503       | 12 V           | 0 A          | 16.6 A                               | 41.7 A                             | 47 A                   | ±2%                     | 120 mV                         |
| NTS505       | 24 V           | 0 A          | 8.3 A                                | 20.8 A                             | 23.4 A                 | ±2%                     | 240 mV                         |
| NTS506       | 18 V           | 0 A          | 11.1 A                               | 27.7 A                             | 30 A                   | ±2                      | 180 mV                         |
| NTS508       | 48 V           | 0 A          | 4.2 A                                | 10.4 A                             | 11.7 A                 | ±2%                     | 480 mV                         |

- Peak current lasting < 30 seconds with a maximum 10% duty cycle.
- At 25 °C including initial tolerance, line voltage, load currents and output voltages adjusted to factory settings.
- Peak-to-peak with 20 MHz bandwidth and 10 μF (tantalum capacitor) in parallel with a 0.1 μF capacitor at rated line voltage and load ranges.
- 12 V fan output cannot be used above 50 °C with convection cooling.

Mechanical Drawing



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